

DATE: 3/29/2022
TIME: 2:46:57 PM

USER: Benjamin.Hodack
DGN: P:\60571085 - BR-0044\900_CAD_GIS\910_CAD\70_NCDOT_TIP\Structures\04 Drawings\401_009_BR0044_SMU_LRFR01.dgn

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	LIVE-LOAD FACTORS (γ _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.19	--	1.75	0.774	1.33	A	E	51.0	1.039	1.30	E	I	50.0	0.80	0.774	1.19	A	E	51.0		
	HL-93 (OPERATING)	N/A		1.72	--	1.35	0.774	1.72	A	E	51.0	1.039	2.09	A	I	82.0	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.69	60.84	1.75	0.774	1.86	E	E	35.5	1.039	2.13	A	I	82.0	0.80	0.774	1.69	A	E	51.0		
	HS-20 (OPERATING)	36.000		2.41	86.76	1.35	0.774	2.41	E	E	35.5	1.039	2.80	A	I	82.0	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.12	55.62	1.40	0.774	5.31	E	E	35.5	1.039	6.82	A	I	82.0	0.80	0.774	4.12	A	E	51.0	
		SNGARBS2	20.000		2.92	58.40	1.40	0.774	3.94	E	E	35.5	1.039	4.74	A	I	82.0	0.80	0.774	2.92	A	E	51.0	
		SNAGRIS2	22.000		2.71	59.62	1.40	0.774	3.68	E	E	35.5	1.039	4.37	A	I	82.0	0.80	0.774	2.71	A	E	51.0	
		SNCOTTS3	27.250		2.01	54.77	1.40	0.774	2.63	E	E	35.5	1.039	3.33	A	I	82.0	0.80	0.774	2.01	A	E	51.0	
		SNAGGRS4	34.925		1.64	57.28	1.40	0.774	2.19	E	E	35.5	1.039	2.69	A	I	82.0	0.80	0.774	1.64	A	E	51.0	
		SNS5A	35.550		1.61	57.24	1.40	0.774	2.15	E	E	35.5	1.039	2.70	A	I	82.0	0.80	0.774	1.61	A	E	51.0	
		SNS6A	39.950		1.47	58.73	1.40	0.774	1.96	E	E	35.5	1.039	2.44	A	I	82.0	0.80	0.774	1.47	A	E	51.0	
	SNS7B	42.000		1.39	58.38	1.40	0.774	1.87	E	E	35.5	1.039	2.37	A	I	82.0	0.80	0.774	1.39	A	E	51.0		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.77	58.41	1.40	0.774	2.39	E	E	35.5	1.039	2.94	A	I	82.0	0.80	0.774	1.77	A	E	51.0	
		TNT4A	33.075		1.78	58.87	1.40	0.774	2.39	E	E	35.5	1.039	2.88	A	I	82.0	0.80	0.774	1.78	A	E	51.0	
		TNT6A	41.600		1.44	59.90	1.40	0.774	1.95	E	E	35.5	1.039	2.49	A	I	82.0	0.80	0.774	1.44	A	E	51.0	
		TNT7A	42.000		1.44	60.48	1.40	0.774	1.96	E	E	35.5	1.039	2.45	A	I	82.0	0.80	0.774	1.44	A	E	51.0	
		TNT7B	42.000		1.46	61.32	1.40	0.774	2.01	E	E	35.5	1.039	2.33	A	I	82.0	0.80	0.774	1.46	A	E	51.0	
		TNAGRIT4	43.000		1.41	60.63	1.40	0.774	1.93	E	E	35.5	1.039	2.25	A	I	82.0	0.80	0.774	1.41	A	E	51.0	
TNAGT5A		45.000		1.34	60.30	1.40	0.774	1.82	E	E	35.5	1.039	2.21	A	I	82.0	0.80	0.774	1.34	A	E	51.0		
TNAGT5B	45.000		③	1.33	59.85	1.40	0.774	1.80	E	E	35.5	1.039	2.14	A	I	82.0	0.80	0.774	1.33	A	E	51.0		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ _{DC}	γ _{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- FUTURE WEARING SURFACE IS NOT INCLUDED

Ⓝ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

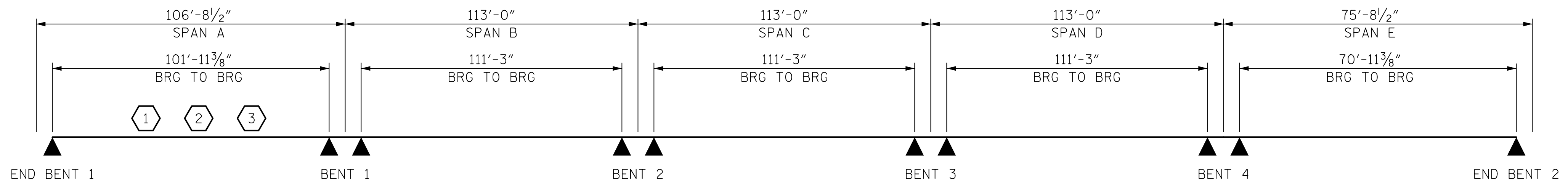
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
E - EXTERIOR GIRDER



LRFR SUMMARY

PROJECT NO. BR-0044
ROCKINGHAM COUNTY
 STATION: 21+97.00 -L-

ASSEMBLED BY : D.R. DRUM	DATE : 02/2022
CHECKED BY : S. NATARAJAN	DATE : 03/2022
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

3/29/2022
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 Benjamin.D.Hodack

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			39

STD. NO. LRFR1